

POLICY: Chorionic Gonadotropins

- human chorionic gonadotropin – hCG
- Pregnyl® (choriogonadotropin alfa – Organon)
- Novarel® (choriogonadotropin alfa - Ferring Pharmaceuticals)
- Chorionic gonadotropin injection – Fresenius Kabi USA, LLC; others
- Recombinant human chorionic gonadotropin - rhCG
- Ovidrel® (choriogonadotropin alfa for injection – Serono)

EFFECTIVE DATE: 1/1/2021

LAST REVISION DATE: 09/04/2019

COVERAGE CRITERIA FOR: All Aspirus Medicare Plans

OVERVIEW

The action of human chorionic gonadotropin (hCG) is very similar to the pituitary luteinizing hormone (LH), although hCG possesses slight follicle-stimulating hormone (FSH) activity.¹⁻³ hCG also stimulates production of gonadal steroid hormones by stimulating the interstitial cells of the testis to produce androgens and the corpus luteum of the ovary to produce progesterone.

In males, androgen stimulation by hCG results in the development of secondary sex characteristics that may lead to testicular descent when no anatomical obstruction is present.¹⁻³ When hCG is discontinued, the descent is usually reversible. During the normal menstrual cycle, LH acts with FSH in the maturation and development of the normal ovarian follicle and the mid-cycle LH surge causes ovulation; hCG can replace LH in this capacity. When pregnancy occurs, hCG produced by the placenta maintains the corpus luteum after LH secretion decreases, supporting continued secretion of estrogen and progesterone and preventing menstruation.

Pregnyl and Novarel are highly purified preparations obtained from the urine of pregnant females, and are intended to be administered intramuscularly (IM).¹⁻³ Ovidrel is a recombinant hCG and is for subcutaneous (SQ) use only.⁴ Pregnyl and Novarel are indicated for: (1) prepubertal cryptorchidism not due to anatomical obstruction, (2) selected cases of hypogonadotropic hypogonadism in males secondary to pituitary deficiency, and (3) induction of ovulation and pregnancy in the anovulatory, infertile woman in whom the cause of anovulation is secondary and not due to primary ovarian failure, and who has been appropriately pretreated with human menotropins.¹⁻³ Ovidrel is indicated for: (1) induction of final follicular maturation and early luteinization in infertile women who have undergone pituitary desensitization and who have been appropriately pretreated with FSH as part of an Assisted Reproductive Technology (ART) program such as *in vitro* fertilization and embryo transfer, and (2) induction of ovulation and pregnancy in anovulatory infertile patients in whom the cause of infertility is functional and not due to primary ovarian failure.⁴ The physicochemical, immunological, and biological activities of recombinant hCG are comparable to those of placental and human pregnancy-urine derived hCG.

Obesity

The prescribing information for Novarel and Pregnyl notes that hCG has not been demonstrated to be an effective adjunctive therapy in the treatment of obesity.^{1,2} There are no data to suggest that hCG increases weight loss beyond that resulting from caloric restriction. The use of hCG for obesity dates back to the 1950s when a British physician, Simeons, recommended daily injections of hCG combined with a 500 kcal diet (Simeons method).⁵ It was noted that hCG administration appeared to diminish and change fat

distribution.^{1,2,6} The theory is that hCG causes the body to preferentially burn stored fat, allowing patients to lose more weight than with diet alone.⁶ It is also purported to suppress appetite, allowing patients to tolerate a restrictive diet without severe hunger. However, evidence is lacking to support these theories and multiple studies have shown that weight loss was generally related to diet restriction as opposed to hCG injections.⁵⁻⁸ A meta-analysis of 24 studies (16 controlled trials, 8 uncontrolled) evaluating hCG use for the treatment of obesity concluded that there is no scientific evidence that hCG causes weight-loss, redistribution of fat, reduces hunger, or induces a feeling of well-being.⁷

POLICY STATEMENT

This benefit exclusion overrides (BEO) policy has been developed to authorize coverage of the targeted drugs for all uses, except infertility and obesity. This BEO policy is not applicable if clients have infertility as a covered benefit. Coverage is also excluded for obesity in addition to infertility since clinical data are lacking for this indication and there is a potential for misuse. All approvals are provided for the duration noted below.

Automation: None.

RECOMMENDED AUTHORIZATION CRITERIA

Coverage of chorionic gonadotropins is recommended in those who meet the following criteria:

1. Medical indications other than infertility and obesity. Approve for 1 year.

In addition to use for infertility, chorionic gonadotropins are used in males for prepubertal cryptorchidism not due to anatomical obstruction, and for hypogonadotropic hypogonadism (hypogonadism secondary to pituitary deficiencies).^{1-3,10}

EXCLUSIONS

Coverage of chorionic gonadotropins is recommended in circumstances that are listed in the Recommended Authorization Criteria.

1. Coverage is not recommended for circumstances not listed in the Recommended Authorization Criteria. Criteria will be updated as new published data are available.

REFERENCES

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2. Novarel® [prescribing information]. Parsippany, NJ: Ferring Pharmaceuticals Inc.; May 2018.
3. Chorionic gonadotropin for injection [prescribing information]. Lake Zurich, IL: Fresenius Kabi; February 2016.
4. Ovidrel® prefilled syringe [prescribing information]. Rockland, MA: EMD Serono, Inc.; June 2018.
5. In Brief: Human chorionic gonadotropin (hCG) for weight loss. *The Medical Letter. Med Lett Drugs Ther.* 2011;1358:13-16.
6. Yen M, Ewald MB. Toxicity of weight loss agents. *J Med Toxicol.* 2012;8:145-152.
7. Lijesen GK, Theeuwes I, Assendelft WJJ, et al. The effect of human chorionic gonadotropin (HCG) in the treatment of obesity by means of the Simeons therapy: a criteria-based meta-analysis. *Br J Clin Pharmacol.* 1995;40:237-243.
8. Lovejoy JC, Sasagawa M. An unfortunate resurgence of human chorionic gonadotropin use for weight loss. *Commentary. Int J Obes.* 2012;36:385-386.
9. Clinical Pharmacology [database online]. Tampa, FL: Gold Standard, Inc.; 2019. Available at <http://www.clinicalpharmacology-ip.com/Default.aspx>. Accessed on August 29, 2019. Search terms: Pregnyl, Novarel, Ovidrel.

OTHER REFERENCES UTILIZED

- Cunningham E. Where can I find information on the use of human chorionic gonadotrophin (HCG) for weight loss? *J Am Diet Assoc.* 2010;110(12):1960.